CHALLENGES
Due to rapid industrialization, weak environmental policies, and poor urban planning, groundwater in China holds significant amounts of heavy metals, chemical fertilizers, and other pollutants. Each year, an estimated 190 million illnesses and 60,000 deaths occur directly result from water-borne pollution.\(^1\) Arsenic and fluorine are pollutants of particular concern—the two elements recognized globally as the most serious inorganic drinking water contaminants.\(^2\) Cases of arsenicosis and fluorosis have been found in provinces across mainland China, including Shanxi (where SWB’s project in Pingyao county is located).

PROJECT OVERVIEW
SWB’s Arsenic-Fluoride Biosand Filters (AFBSF) are biosand filters specifically designed to remove arsenic and fluoride as well as other groundwater contaminants. SWB first built, tested (under conditions replicating the contamination scenario in Shanxi), and refined prototype AFBSFs at the University of Michigan. Later, on the ground in Pingyao, Shanxi, SWB worked with a group from its student led partner organization, Rural Intercultural Student Exchange (RISE), as well as a student group from the Taiyuan University of Technology to implement working AFBSFs in Pingyao.

OUR IMPACT
Forty-eight biosand filters were successfully built and installed in individual households over the course of the project. AFBSF performance tests indicate successful removal of arsenic and fluorine content from the inflowing water while also minimizing the turbidity.